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Group Art Unit:

Examiner:

Title : METHODS FOR MOTION ESTIMATION WITH ADAPTIVE MOTION ACCURACY

Miller Nash LLP  
3500 U. S. Bancorp Tower  
111 SW Fifth Avenue  
Portland, Oregon 97204  
July 12, 2000

Assistant Commissioner for Patents  
Washington, D.C. 20231  
**ATTENTION: Licensing and Review**

☒ expedited handling.  
☒ telephone report

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It is requested that the duplicate copy of the petition be returned with the license or other action on the petition.

The Inventors are Jordi Ribas-Corbera and Jiandong Shen. The Invention is entitled METHODS FOR MOTION ESTIMATION WITH ADAPTIVE MOTION ACCURACY. It is believed that this invention is clearly of no interest from a security standpoint, as it relates to:

Methods for motion estimation with adaptive motion accuracy of the present invention include several techniques for computing motion vectors of high pixel accuracy with a minor increase in computation. These methods are primarily for use in video imaging. One technique uses fast-search strategies in sub-pixel space that smartly searches for the best motion vectors. An alternate technique estimates high-accurate motion vectors using different interpolation filters at different stages in order to reduce computational complexity. Yet another technique uses rate-distortion criteria that adapts according to the different motion accuracies to determine both the best motion vectors and the best motion accuracies. Still another technique uses a VLC table that is interpreted differently at different coding units, according to the associated motion vector accuracy.

Expedited handling of this petition for license is requested. Enclosed is a check for \$130 for the petition fee. The Commissioner is hereby authorized to charge any additional fee, or credit any overpayment, to Deposit Account No. 13-3571. A duplicate copy of this sheet is enclosed.

Please notify petitioner of the issuance of the license, by telephone, at the number shown below.

Respectfully submitted,

A handwritten signature in cursive script, reading "Karen Oster", written in dark ink. The signature is positioned above a horizontal line.

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				Application Number	
				Filing Date	Concurrently herewith
				First Named Inventor	Jordi Ribas-Corbera
				Group Art Unit	
				Examiner Name	
Sheet	1	of		Attorney Docket Number	KDO:190230-4

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Examiner Signature		Date Considered	
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<sup>1</sup> Unique citation designation number. <sup>2</sup> See attached Kinds of U.S. Patent Documents. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

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PTO/SB/08B (10-96)

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<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)		Application Number			
		Filing Date	Concurrently herewith		
		First Named Inventor	Jordi Ribas-Corbera		
		Group Art Unit			
		Examiner Name			
Sheet		of		Attorney Docket Number	KDO:190230-4

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
		BERND GIROD, Motion-Compensating Prediction with Fractional-Pel Accuracy, IEEE Transactions on Communications, Vol. 41, No. 4, pp. 604-612, April 1993	
		SMITA GUPTA and ALLEN GERSHO, On Fractional Pixel Motion Estimation, Proc. SPIE VCIP, Vol. 2094, pp. 408-419, Cambridge, November 1993	
		XIAOMING LI and CESAR GONZALES, A Locally Quadratic Model of the Motion Estimation Error Criterion Function and Its Application to Subpixel Interpolations, IEEE Transactions on Circuits and Systems for Video Technology, Vol. 6, No. 1, February 1996	
		JORDI RIBAS-CORBERA and DAVID L. NEUHOFF, On the Optimal Motion Vector Accuracy for Block-Based Motion-Compensated Video Coders, Proc. IST/SPIE Digital Video Compression: Algorithms and Technologies, pp. 302-314, San Jose, February 1996	
		ULRICH BENZLER, Proposal for a new core experiment on prediction enhancement at higher bitrates, ISO/IEC JTC1/SC29/WG11 Coding of Moving Pictures and Audio, MPEG 97/1827, Sevilla, February 1997	
		ULRICH BENZLER, Performance Evaluation of a Reduced Complexity Implementation for Quarter Pel Motion Compensation, ISO/IEC JTC1/SC29/WG11 Coding of Moving Pictures and Audio, MPEG 97/3146, San Jose, January 1998	
		Response to Call for Proposals for H.26L, ITU-Telecommunications Standardization Section, Q.15/SG16, doc. Q15-F-11, Seoul, November 1998	
		Enhancement for the Telenor proposal for H.26L, ITU-Telecommunications Standardization Section, Q.15/SG16, doc. Q15-G-25, Monterey, February 1999	

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